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25. Component according to Claim 1 characterized in that the geometrically defined near-surface areas are cell walls melted in one or several cutting directions so that the diffusion resistance in said geometrically defined areas to ambient media rises independent of the cutting direction.

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26. Component according to Claim ²⁹24 or ³⁰25 characterized in that said geometrically defined near-surface areas are visually different from non-melted wood in their optical properties absorptivity, reflectivity and diffusing power, and hence, luster.

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27. Component according to Claim ²⁹24 or ³⁰25 characterized in that the geometrically defined near-surface areas have a higher hardness and abrasion resistance.

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28. Component according to Claim ²⁹24 or ³⁰25 characterized in that the deformation behavior in the geometrically defined near-surface areas is altered compared with the original state.

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29. Component according to Claim ²⁹24 or ³⁰25 characterized in that the bulk of the solidified wood melt is in a geometrically defined area of the component below the surface.

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30. Component according to Claim ²⁹24 or ³⁰25 characterized in that the physical and/or chemical properties of the areas are altered by substances incorporated into the solidified wood melt.

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31. Component according to Claim ²⁹24 or ³⁰25 characterized in that the incorporated substances are particles and/or pigments.

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Method for producing a wood component of Claim ²⁹24 or ³⁰25 characterized in that

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a locally limited or full-area contact-free short-time high energy input into the wood component occurs by electromagnetic waves, whereby a proportion of melted volume of geometrically defined magnitude at or below the surface of the component is produced with the energy input dimensioned such that the proportion of melted volume is produced without pyrolytic degradation processes.

Rule 126
38.
35. Method according to Claim ³⁷~~32~~ characterized in that electromagnetic waves in form of laser light are used.

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34. Method according to Claim ³⁷~~32~~ characterized in that the duration of the energy input is up to 50 ms.

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35. Method according to Claim ³⁷~~32~~ characterized in that the energy input is carried out through electromagnetic radiation that can be controlled extremely accurately and quickly regarding the lateral extension of the range of interaction, time of interaction and intensity, having a wavelength adapted to the desired depth of the range of interaction.

41.
36. Method according to Claim ³⁷~~32~~ characterized in that the process is carried out under inert gas.

42.
37. Method according to Claim ³⁷~~32~~ characterized in that the process is carried out in free atmosphere, i.e. in free air, at room temperature and normal atmospheric pressure.

43.
38. Method according to Claim ³⁷~~32~~ characterized in that extraneous substances are incorporated into the geometrically defined areas by the melting process.

44.
39. Method according to Claim ⁴⁰~~35~~ characterized in that the depth, or thickness of the range of interaction, respectively, according to the objective of the processing action is adjusted

by selection of the wavelength, or range of wavelength, respectively, and the power density of the electromagnetic radiation as well as the time of interaction between the electromagnetic waves and the geometrically defined areas.

Rule 126
⁴⁵40. Method according to Claim ⁴⁴39 characterized in that the lateral extension of the range of interaction, the time of interaction and the intensity are realized by combination of the relative motion between the beam and the workpiece as well as by methods of dynamic beam forming and beam focusing.

Control
⁴⁶41. Method according to Claim ³⁸38 characterized in that the energy input is carried out using a pulse-type laser.

⁴⁷42. Method to Claim ⁴⁶41 characterized in that the time of interaction between the laser beam and the geometrically defined areas is equivalent to the pulse length of the laser.

⁴⁸43. A plurality of components of Claim ^{29 30}24 or 25 characterized in that said components having a melted area are joined with each other by the solidified wood melt free of pyrolytic degradation products.

⁴⁹44. A product characterized in that a wood-free material is joined with said component having a melted area of Claim ^{29 30}24 or 25, by the solidified wood melt free of pyrolytic degradation products.

⁵⁰45. A product according to Claim ⁴⁹44 characterized in that the wood-free material is at least one of transparent polymers and fibrous materials.

⁵¹46. A product according to claim ^{cancelled}20 characterized in that particles or pigments are incorporated into the solidified wood melt free of pyrolytic degradation products.--